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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,729	02/26/2004	Sumantra Chakravarty	030061 /QUALP825US	6099
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Amin, Turocy & Calvin LLP 1900 E. 9th Street 24th Floor, National City Center Cleveland, OH 44114			EXAMINER MURPHY, RHONDA L	
			ART UNIT 2616	PAPER NUMBER
			NOTIFICATION DATE 08/08/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/788,729	<b>Applicant(s)</b> CHAKRAVARTY ET AL.	
	<b>Examiner</b> RHONDA MURPHY	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 17, 18 and 20-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17, 18 and 20-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This communication is responsive to the amendment filed on 4/21/08. Accordingly, claims 16 and 19 have been canceled and claims 1-15, 17, 18 and 20-30 are currently pending in this application.

### ***Response to Arguments***

1. Applicant's arguments filed 4/21/08 have been fully considered but they are not persuasive. In regards to claims 1, 15, 18 and 21, applicant argues Shou fails to teach "encoding both first and second nominally orthogonal polarization signals with a same long code." As to claims 8 and 26, Applicant also argues Shou fails to teach "receiving encoded first and second nominally orthogonal polarization signals.

2. However, Examiner respectfully disagrees. In figure 3, Shou illustrates encoding first and second orthogonal polarization signals with the same long code. The signals are supplied to multipliers 16 and 17 and into complex type matched filter 18 which output signals  $S_i$  and  $S_q$ . The signals are encoded with a long code via long code search circuit 27 and PN generator 19. It is known in the art that long codes are orthogonal and column 7, lines 50-54, Shou discloses "positive and negative polarities."

3. Furthermore, the preamble of the claim recites a "transmission method." It is understood that a transmission method is encompassed in the Shou reference and illustrated in figure 3. A method is described by Shou in which signals are input and

output to at least one destination. Therefore, a transmission method has been disclosed.

4. Thus, it is Examiner's position that all claim limitations, as written, have been met and the rejection has been maintained.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 8, 12 – 15, 17, 18, 20, 21, 26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shou et al. (US 6,038,250) in view of Ibanez-Meier et al. (US 5,898,362).

**Regarding claims 1 and 21**, Shou teaches a transmission method, comprising: encoding both first and second nominally orthogonal polarization signals (Fig. 3; signals supplied to multipliers 16 and 17; col. 7, lines 50-54) with a same long code (col. 6, lines 24-32); and transmitting the long-encoded first and second nominally orthogonal polarization signals to at least one destination (via output circuit 26).

Shou fails to explicitly teach transmitting the signals from respective first and second transmission sources.

However, Ibanez-Meier teaches transmitting the signals from respective first and second transmission sources (Fig. 1; users 30 and 40).

In view of this, it would have been obvious to one skilled in the art to modify Shou's method by including first and second transmission sources, so as to enable two transmitting devices to transport data with minimal interference.

**Regarding claims 8, 13, 26 and 29**, Shou teaches a method of demodulating first and second nominally orthogonal polarization signals (col. 6, lines 40-45) that were transmitted from a transmission source after having been encoded with a same long code (col. 6, lines 24-32), the method comprising: receiving the encoded first and second nominally orthogonal polarization signals (col. 6, lines 40-45); and applying the same long code to the transmitted encoded first and second nominally orthogonal polarization signals (col. 6, line 61 to col. 7, line 10).

Shou fails to explicitly teach transmitting the signals from respective first and second transmission sources.

However, Ibanez-Meier teaches transmitting the signals from respective first and second transmission sources (Fig. 1; users 30 and 40).

In view of this, it would have been obvious to one skilled in the art to modify Shou's method by including first and second transmission sources, so as to enable two transmitting devices to transport data with minimal interference.

**Regarding claim 12**, Shou teaches the method of claim 8, wherein: the receiving step is carried out in an orthogonal code division multiple access (OCDMA) communications system (col. 1, lines 13-16).

**Regarding claims 14 and 30**, the combined method of Shou and Ibanez-Meier teach the method of claim 1, wherein the transmitting step includes: transmitting the long-encoded first and second nominally orthogonal polarization signals from a first and second transmission sources to at least one destination.

Ibanez-Meier further teaches transmitting from plural first transmission sources and from plural second transmission sources, respectively, to the at least one destination (Fig. 2, TD1, TD2).

**Regarding claims 15 and 17**, Shou teaches the method of claims 1, 7 and 8, but fails to explicitly disclose a computer program product storing program instructions for execution on a computer system having at least one data processing device, whose instructions when executed by the computer system cause the computer system to perform the method of claims 1, 7 and 8.

However, it is known in the art for a computer program having a data processing device to perform the above method.

Thus, it would have been obvious to one skilled in the art to include a computer program, in order to execute the instructions to implement the method.

**Regarding claim 18**, Shou teaches a system configured to perform the method of claim 1 (Fig. 3).

**Regarding claim 20**, Shou teaches a system configured to perform the method of claim 8 (Fig. 3).

4. Claims 2-7, 9-11, 22-25, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shou and Ibanez-Meier as applied to claims 1 and 21 above, and further in view of Hwang et al. (US 2002/0115473).

**Regarding claims 2, 9, 22 and 27**, the combined method of Shou and Ibanez-Meier teach the method of claims 1, 8 and 21, and further teaches short codes. Shou fails to explicitly disclose orthogonalizing plural sub-channels of each of the first and second nominally orthogonal polarization signals by applying respective plural mutually distinct Walsh codes in each sub-channel.

However, it is known in the art for the orthogonal polarization signals to contain sub-channels, or time slots for the purpose of transmitting data within certain intervals.

Furthermore, Hwang discloses applying respective plural mutually distinct Walsh codes in each sub-channel (page 1, paragraph 12).

In view of this, it would have been obvious to one skilled in the art to modify Shou's method by applying Walsh codes to each channel, for the purpose of supplying a spreading code to each the channels.

**Regarding claims 3, 10, 23 and 28**, the combined method of Shou, Ibanez-Meier and Hwang teach the method of claims 2, 9 and 22. Shou fails to explicitly disclose the method wherein the orthogonalizing step includes: applying different Walsh codes to different respective signals originating from different respective users of the communication system.

However, Hwang teaches applying different Walsh codes to different respective signals originating from different respective users of the communication system (page 4, paragraph 43).

In view of this, it would have been obvious to one skilled in the art to modify Shou's method by applying different Walsh codes to each channel, in order to spread the channels using a distinct set of codes.

**Regarding claims 4 and 11**, the combined method of Shou, Ibanez-Meier and Hwang teach the method of claims 3 and 10. Shou further teaches the transmitting step is carried out in an orthogonal code division multiple access (OCDMA) communications system (col. 1, lines 13-16).

**Regarding claim 5**, Shou teaches the method of claim 1, wherein: the transmitting step is carried out in an orthogonal code division multiple access (OCDMA) communications system (col. 1, lines 13-16).

**Regarding claims 6 and 24**, the combined method of Shou and Ibanez-Meier teach the method of claim 1, wherein the transmitting step includes: transmitting the long-encoded first and second nominally orthogonal polarization signals from a first and second transmission sources to at least one destination.



Ibanez-Meier further teaches transmitting from plural first transmission sources and from plural second transmission sources, respectively, to the at least one destination (Fig. 2, TD1, TD2).

**Regarding claims 7 and 25**, the combined method of Shou and Ibanez-Meier teach a communication method including the transmission method of claim 1. Shou further teaches at the destination, receiving the encoded first and second nominally orthogonal polarization signals (col. 6, lines 41-45); and applying the same long code to the received encoded first and second nominally orthogonal polarization signals received at the destination (col. 6, lines 24-32).

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RHONDA MURPHY whose telephone number is (571)272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Firmin Backer can be reached on (571) 272-6703. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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